

San Francisco Bay Conservation and Development Commission

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August 8, 2016

Application Summary

(For Commission consideration on August 18, 2016)

Number: BCDC Permit Application No. 2001.008.41 (Material Amendment)
Date Filed: August 8, 2016¹
90th Day: November 6, 2016
Staff Assigned: Tinya Hoang (415/352-3622; tinya.hoang@bcdc.ca.gov)

Summary

Applicant: California Department of Transportation (Caltrans)

Location: In the Bay, at Piers E4 through E18 of the original east span of the San Francisco-Oakland Bay Bridge (SFOBB or Bay Bridge), in the City and County of San Francisco and the City of Oakland, Alameda County (Figure 1).



Figure 1: Project Location

¹ Select permit application filing requirements have been waived by the Commission’s Executive Director per Commission Regulation Section 10311.

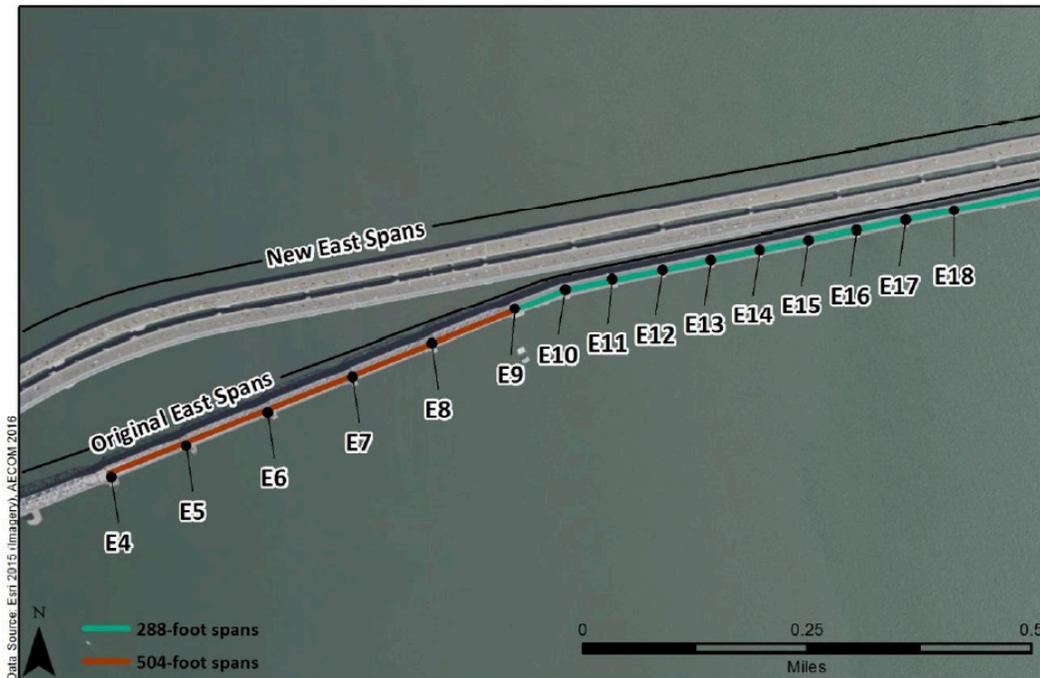


Figure 2: Project Site

Project: The proposed project would use controlled explosives to demolish fifteen pier foundations, Piers E4 through E18, of the original east span of the Bay Bridge. For Piers E4 and E5, the majority of the demolition debris would fall into the caissons of the piers, which extend approximately 130 feet below the Bay floor; debris would be removed down to a specified limit and any debris that does not fall into the caissons would be placed within the caisson footprint. Piers E6 through E18 do not have caissons that extend below the Bay floor, but the demolition debris would also be removed down to a specified limit. At project completion, a total of approximately 28,210 cubic yards (cy) of demolition debris would remain in the Bay. As proposed, natural sedimentation processes are expected to cover areas where debris remains resulting in minimal or no Bay floor fill coverage over time.

Issues Raised: The permit application raises three main issues, specifically whether the project would be consistent with: (1) the Commission's law and policies on Bay fill; (2) the Bay Plan policies regarding natural resource protection; and (3) the Bay Plan policies on water quality.

Background

On November 20, 2001, the Commission issued BCDC Permit No. 2001.008.00, which authorized Caltrans to construct the new east span of the Bay Bridge. The new bridge located north of the original east span—the subject of this permit application—opened for vehicular traffic on September 2, 2013. The original east span completed in 1936 was supported by 21 in-water piers (Piers E2 through E22), as well as land-based piers and bents at Yerba Buena Island (YBI) and in Oakland.

BCDC Permit No. 2001.008.00 required Caltrans to:

“Completely remove the existing East Span of the SFOBB covering approximately 12.5 acres of high-level suspended fill for the bridge deck, trusses and girders and approximately 78,829 cubic yards of solid fill of the support piers and footings and pier fenders. All material from the existing East Span shall be removed and disposed of at an authorized location outside of the Commission’s jurisdiction. The permittee shall remove all pilings, support piers and footings to at least 1.5 feet below the existing mudline, and shall restore the affected areas to the original or existing contours and approximate soil composition. Prior to removal of the existing East Span, the permittee shall prepare and submit a removal plan to be approved by or on behalf of the Commission to ensure that the removal plan does not adversely impact Bay-related resources, endangered species, navigation and public health and safety and that sufficient safeguards are included to protect human safety and capture all demolition debris and related substances.”

At the time of issuance of the permit, it was anticipated that demolition of the original east span of the SFOBB could involve cofferdams, pile driving and mechanical dismantling. Starting in 2011, Caltrans began working with BCDC and other agencies to explore the possibility of using controlled blasting to demolish the pier foundations. Caltrans proposed the controlled blasting of Pier E3, the largest of the bridge piers, as a demonstration project to test the

viability of this alternative demolition method. Caltrans believed that this method would “reduce and avoid impacts to environmental resources in the Bay, reduce the SFOBB Project’s total duration of in-water construction activities in the Bay and minimize risks to public safety.”

On September 24, 2015, BCDC issued Material Amendment No. Thirty-Eight, authorizing the Pier E3 Demonstration Project (Demonstration Project). Caltrans conducted the controlled blasting of Pier E3 on November 14, 2015, and subsequent debris management through December 14, 2015. On February 4, 2016, Caltrans presented the results of the Demonstration Project to the Commission, during a Commission briefing. Based on the hydro-acoustic, biological, and water quality results, Caltrans found that the use of controlled blasting reduced adverse effects on environmental resources compared to conventional mechanical dismantling methods, by reducing the time of in-water work. Thus, Caltrans deemed the Demonstration Project a success.

Caltrans is now returning to the Commission for additional authorization with a permit amendment (No. Forty-One) to allow for the controlled blasting of Piers E4 through E18. The proposal does not include the demolition of Piers E19 through E22, which are required to be removed under the existing permit. In advance of the subject proposal, Caltrans applied for authorization to dispose of debris from the mechanical dismantling of the pier caps and fenders of Piers E4 and E18 within their respective caissons and central chambers, and to conduct activities associated with the controlled blasting, such as installation of a blast attenuation system, but exclusive of the actual blast operation. On June 21, 2016, BCDC issued non-material Amendment No. Forty, which authorized those activities.

Project Description

Project

Details: The applicant, California Department of Transportation, proposes the following project:

In the Bay:

1. Temporarily place test charges and equipment associated with test blasts to occur at Piers E4 through E18 (total of up to 30 test blasts) prior to actual controlled blasts, and upon completion of the tests, remove associated equipment;

2. Temporarily place and, upon completion of the controlled blasts of Piers E4 and E5, remove up to two buoys anchored to the Bay floor and up to 20 fish cages used to conduct a study to examine potential effects of controlled blasting of Piers E4 and E5 on fish;
3. Demolish Piers E4 through E18 through the use of controlled explosives resulting in approximately 58,360 cubic yards of debris;
4. Following the controlled blasts at Piers E4 and E5, dispose approximately 20,820 cubic yards of debris in and on top of the caissons and within the remnant caisson footprints, over an approximately 10,800-square-foot (0.2-acre) area at a height not exceeding three feet below the lowest elevation of the natural mudline adjacent to and outside of the scour pit surrounding each former pier footprint;
5. Following the controlled blasts at Piers E6 through E18, dispose approximately 7,390 cubic yards of debris on the Bay floor within a total area measuring at least approximately 80,320 square feet (1.8 acres) to a height not exceeding three feet below the lowest elevation of the natural mudline adjacent to and outside of the scour pit surrounding each former pier footprint; and
6. Remove a total of approximately 30,150 cubic yards of debris resulting from the controlled blasting of Piers E6 through E18 to an authorized location outside the Commission's jurisdiction.

Bay Fill:

The controlled blasts would generate a total of approximately 58,360 cubic yards of debris. Approximately 30,150 cubic yards of the debris resulting from the demolition of Piers E6 through E18 would be removed to a location outside of the Commission's jurisdiction. Approximately 28,210 cubic yards of debris would remain in the Bay within an approximately 91,120-square-foot area (total). However, as proposed, natural sedimentation processes are expected to cover areas where debris remains resulting in minimal or no Bay floor fill coverage over time. At project completion, there would be an overall net increase in water volume, approximately 47,650 cubic yards (Table 1).

Pier Number	Existing Solid Fill Removed (cubic yards)	Demolition Debris in Bay ² (cubic yards)	Remnant Footprint of Former Piers (square feet)
E4	10,825	12,320	5,400
E5	5,730	8,500	5,400
E6	6,857	1,930	8,700
E7	3,598	850	8,700
E8	2,505	440	8,700
E9	5,401	1,140	10,000
E10	1,678	328	4,930
E11	1,597	360	5,180
E12	1,310	320	4,750
E13	1,310	328	4,750
E14	1,375	320	4,750
E15	1,212	320	4,750
E16	1,212	320	4,750
E17	1,572	376	5,180
E18	1,469	360	5,180
TOTAL	47,650	28,210 ³	91,120

Table 1. Bay Fill Information

Schedule and Cost:

Caltrans proposes to demolish Piers E4 and E5 in Fall 2016, Piers E6 to E11 in Fall 2017, and Piers E12 to E18 in Fall 2018. The debris removal and management would be completed by mid-December of each calendar year. The estimated project cost is \$78,361,553.

² Quantity includes bulking factor of 1.6

³ It is expected that the resulting debris would be covered by natural sedimentation processes ultimately resulting in minimal or no Bay floor coverage.

Staff Analysis

A. **Issues Raised:** The permit application raises three main issues, specifically whether the project would be consistent with: (1) the Commission's law and policies on Bay fill; (2) the Bay Plan policies regarding natural resource protection; and (3) the Bay Plan policies on water quality.

1. **Bay Fill.** The Commission may allow fill when it meets the requirements identified in Section 66605 of the McAteer-Petris Act, which provide, in part, that fill "should be limited to water-oriented uses," should be approved only when "no alternative upland location" is available, should be "the minimum amount necessary to achieve the purpose of the fill," and its "nature, location, and extent of any fill should be such that it will minimize harmful effects to the Bay area, such as, the reduction or impairment of the volume, surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment...."

In the Bay, the proposed project would involve the temporary placement of materials and equipment to conduct test blasts and conduct a fish study associated with the blasting of the piers, the demolition of fifteen bridge piers, and the disposal and removal of demolition debris.

- a. **Water-Oriented Use.** Section 66605 of the McAteer-Petris Act identifies "bridges" as a water-oriented use. The proposed project involves the demolition of Piers E4 through E18 of the former east span of the Bay Bridge, which were constructed prior to the Commission's creation, and are, thus, technically within its 100-foot shoreline band jurisdiction. The permit currently requires, as mitigation for the fill associated with the new east span, the removal of "...all pilings, support piers and footings [of the former east span] to at least 1.5 feet below the existing mudline, and shall restore the affected areas to the original or existing contours and approximate soil composition."

Caltrans proposes to remove Piers E4 through E18 through the use of controlled explosives or blasts. Similar to the former Pier E3, Piers E4 and E5 consist of hollow caisson structures that extend approximately 130 feet deep below the Bay floor. The proposed blasting of Piers E4 and E5 would allow rubble to fall into the caisson structures. In contrast, Piers E6 through E18 do not have caissons extending deep below the Bay floor, and consist of a cellular concrete structure supported by a concrete foundation and timber piles (Exhibit A). The controlled blasting of Piers E6 through E18 would involve blasting to and through portions of the concrete foundation or the cellular structure on top of the concrete foundation. The debris from Piers E6 through E18 would fall onto and beyond the remnant pier footprints. Debris from each pier would be managed and removed to a specified limit. At Piers E4 and E5, all debris would be placed strictly within the respective pier footprints, while at Piers E6 through E18, debris would be located within and outside of the pier footprints.

The controlled blasting of all fifteen piers would generate a total of approximately 58,360 cubic yards of debris, of which approximately 28,210 cubic yards would remain and approximately 30,150 cubic yards would be removed from the Bay.

The proposed project includes placement of material and equipment associated with pier demolition, including test charges and equipment in preparation for controlled blasts, and buoys and cages for the purposes of examining the potential impacts of the controlled blasts on fish. These activities would be temporary and undertaken to ensure that pier blasting occurs in a manner that is safe and protective of Bay resources.

- b. **Upland Alternative and Minimum Fill.** The proposed fill associated with the test blasts and fish study has no upland alternative as it supports the proposed pier demolitions and, further, is temporary in nature. The proposed demolition project also involves debris disposal in the water. Typically, the Commission recommends that fill in the Bay be removed when no longer in use. However, complete removal of such fill is not always possible because structures break during removal or related environmental disturbance is significant. In cases where piles are proposed for removal, the Commission typically requires the structures be cut 1.5-3.0 feet below the mudline, with the goal that remnant fill is not exposed above the Bay floor.

The subject permit currently requires:

“...all pilings, support piers and footings [of the former east span] to at least 1.5 feet below the existing mudline....” Further, Special Condition II.W of the permit requires in part, that “[a]ll construction debris from the demolition of the existing bridge that is determined to be inert, non-hazardous, and non-toxic may be deposited within the footings of the existing bridge up to but no higher than the scoured mudline around the pier’s caisson (the scoured mudline immediately adjacent to Pier E3 is between approximately 8-10 feet below the mudline in the area away from the pier) with express, written approval by or on behalf of the Commission. Any construction debris that is placed within footings of the former bridge shall be fully contained within the pier walls and shall not leach into the existing water column....”

As proposed, the pier and debris removal limit would be “three feet below the lowest elevation of the natural mudline adjacent to and outside of the scour pit surrounding each pier” (Exhibits B and C). The scour pit is a hole in the mud caused by water flowing around each pier structure. The scour pits at Piers E4 through E18 range in average depth from approximately 1 to 10 feet,⁴ and are approximately 150 to 250 feet wide in the east-west direction.

The blasts would generate a total of approximately 58,360 cubic yards of debris. A portion of material would be disposed outside of the Bay, and a total of approximately 28,210 cubic yards of debris would remain in the Bay (equivalent to 52% of the total amount). Approximately 74% of this would be disposed within the caissons and caisson footprints of Piers E4 and E5. The rest would be dispersed on top of and

⁴ Depth was calculated as the difference between the average scour line elevation and the lowest elevation of mudline outside and adjacent to the scour pit.

around the remaining footprints of Piers E6 through E18. The demolition of Piers E4 through E18 would result in a total of approximately 47,650 cubic yards of open Bay volume upon completion of the project.

In June 2016, Caltrans conducted a hydrographic survey of the Pier E3 footprint, six months after the Pier E3 blast was completed. The survey shows that approximately 2,582 cubic yards of sediment filled in the scour pit, and that approximately 50% of the Pier E3 footprint accreted at least 1 foot of sediment.

The Bay Plan policies on subtidal areas state, in part: “[a]ny proposed filling or dredging project in subtidal areas should be thoroughly evaluated to determine the local and Bay-wide effects of the project on...(b) tidal hydrology and sediment movement;...and (e) the Bay’s bathymetry.”

Caltrans has stated that for the proposed project, “[t]he remaining pier structures below the mudline⁵ are expected to become buried in sediment after the removal of each pier,” and that, “[b]ecause of the relatively small area being exposed to sedimentation at each former pier location, these areas are expected to fill naturally with Bay sediments over the course of a few major storm events.” Further, the proposed removal limit is acceptable to the U.S. Coast Guard for the purposes of navigational safety.

Although the area of the remnant footprints would be covered with debris following demolition, natural sedimentation processes are expected to fill in and cover the affected areas, thereby resulting in no net increase of fill along the Bay floor. The Commission staff requested that Caltrans conduct a sedimentation and scour analysis to provide information to ensure that the debris would be covered with sediment over time and to determine whether there could be continued scouring due to the remaining debris and structures. Caltrans stated that it would be difficult to model the sedimentation and predict how long it would take for sedimentation to occur. Caltrans does propose to monitor sedimentation at the pier footprints, according to the schedule in Table 2.

Year	Piers to Demolish	Pier Footprints to Monitor by End of Year
2016	E4, E5	E3 (1 year after demolition)
2017	E6 - E11	E3 (2 years after demolition) E4 - E5 (1 year after demolition)
2018	E12 - E18	E3 (3 years after demolition) E4 - E5 (2 years after demolition) E6 - E11 (1 year after demolition) ⁶

Table 2. Monitoring Schedule

⁵ Caltrans defines mudline as “the lowest elevation of the natural mudline adjacent to and outside of the scour pit surrounding each pier.”

⁶ No sedimentation monitoring is proposed at Piers E12 through E18 at this time.

Caltrans proposes to determine if further monitoring is necessary after the proposed monitoring is completed. At this time, Caltrans' proposal does not include corrective measures in the event that monitoring data shows sedimentation and scouring is not occurring as expected.

The Commission must determine if the proposed project meets the definition of a water-oriented use, has no upland alternative, and constitutes the minimum necessary fill.

2. **Bay Biological Resources.** In addition to the provisions of Section 66605(d) of the McAteer-Petris Act regarding fill effects on resources, the Bay Plan contains the following relevant policies:

Fish, Other Aquatic Organisms, and Wildlife Policy 2, states, in part: "...habitats that are needed to conserve, increase, or prevent the extinction of any native species, species threatened or endangered...should be protected..." Policy 4 states, in part: "[t]he Commission should: (a) consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened... species...; [and] (c) give appropriate consideration to the recommendations of the [resource agencies] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat." Further, the Bay Plan Mitigation Policy 1 states, in part, that projects should avoid adverse environmental impacts and, if unavoidable, impacts minimized to the greatest extent practicable and, moreover, require measures to compensate for such impacts.

- a. **Results of Pier E3 Demonstration Project.** The Pier E3 Demonstration Project (authorized in Amendment 38 to the subject permit) raised issues on the potential hydroacoustic impacts to fish, marine mammals and other wildlife, resulting from the sound pressure wave from the blast. To minimize these potential impacts, Caltrans used a blast attenuation system (BAS) based on the assumption that it would achieve a pressure attenuation rate of 80%. The results from the Pier E3 blast showed that approximately 80% attenuation was achieved, and that the area of hydroacoustic impact was substantially smaller than predicted. Following the blast, bird predation of fish, organic material and debris was observed, and a few dead fish were collected from the surface. No impacts to birds or mammals were observed. Based on the results of the Pier E3 blast, the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) agree that the proposed use of controlled explosives would result in less environmental impact as compared to mechanical dismantling methods.
- b. **Potential Impacts to Fish.** According to Caltrans, the types of impacts associated with the controlled blasting of Piers E4 through E18 are anticipated to be similar to those observed during the Pier E3 blast. Although the individual blasts for Piers E4 through E18 are expected to be smaller than that of Pier E3, Caltrans used the hydroacoustic results from the Pier E3 blast as a conservative estimate for assessing the potential impacts to fish from the blasts of Piers E4 through E18.

Caltrans submitted a Biological Assessment (BA) to NMFS on the proposed project. The BA determined that the project may affect, but not likely adversely affect, the following federally-listed species: Central California Coast Coho salmon, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook Salmon, Central California Coast steelhead, Central Valley steelhead or Southern DPS green sturgeon. These affects relate to noise, The project may also result in temporary impacts to designated critical habitat for the latter five species. The BA also analyzes impacts to Essential Fish Habitat, eelgrass, and other fish species managed under the Magnuson-Stevens Act, including northern anchovy, Pacific herring, Pacific sardine, jacksmelt, English sole and longfin smelt. In order to address these impacts, Caltrans proposes avoidance and minimization measures including use of the BAS, timing the blasts between September 1 and November 30, bird predation monitoring, fish salvage, Pacific herring monitoring, hydroacoustic monitoring and implosion event reporting. The NMFS Biological Opinion is not yet final, but NMFS has stated that the opinion, once issued, will be consistent with the information contained in the BA.

Under the California Endangered Species Act, the project could result in take of longfin smelt. CDFW has prepared a draft amendment to its existing Incidental Take Permit (ITP) for the SFOBB East Span Seismic Safety Project allowing for take associated with the proposed controlled blasting of Piers E4 through E18. This draft permit requires Caltrans to prepare and implement a fisheries and hydroacoustic monitoring program. Further, prior to each blast, Caltrans would be required to deploy sonar technology on the planned day of demolition to confirm that no large schools of fish are present within the vicinity of each pier. If large schools are found, Caltrans would need to take measures to avoid or minimize impacts to the maximum extent feasible. Although previous CDFW requirements to conduct post-blast fish trawl surveys and a caged fish study will be removed from the amended ITP, Caltrans proposes to conduct a caged fish study to examine the effects of the Pier E4 and E5 blasts on fish.

In its draft permit, CDFW concluded that no additional mitigation is required for the controlled blasting of Piers E4 through E18. Although CDFW previously required Caltrans to purchase four acres of mitigation credits for take of longfin smelt associated with the Pier E3 blast, CDFW determined that Caltrans has already provided mitigation for activities covered in its ITP that have not yet occurred and that take occurring from the blasting of Piers E4 through E18 would be offset by this completed mitigation.

Following the blasts, debris management activities would occur until December 15, which would coincide with the Pacific herring spawning season (December 1 to February 28). These activities would require a Pacific Herring Work Waiver from CDFW, and the inclusion of herring monitoring guidelines in a monitoring plan to be approved by CDFW.

- c. **Potential Impacts to Marine Mammals.** The National Marine Fisheries Service Office of Protected Resources (NMFS OPR) has drafted an Incidental Harassment Authorization (IHA) for potential marine mammal harassment incidental to the controlled blasting of Piers E4 and E5 only. IHAs consist of one-year authorizations and, thus, controlled blasting of Piers E6 through E18 would require additional IHAs. Caltrans has not yet completed an analysis of the potential marine mammal impacts from the blasting of Piers E6 through E18.

For Piers E4 and E5, seven marine mammals species would potentially be affected: Pacific harbor seal, California sea lion, northern elephant seal, northern fur seal, harbor porpoise, gray whale and bottlenose dolphin. None of these species are listed as endangered or threatened under the federal Endangered Species Act or as a depleted or strategic stock under the Marine Mammal Protection Act. The blasts of Piers E4 and E5 are most likely to cause temporary behavioral changes, though a number of individuals could be exposed to sound levels that could cause temporary noise-induced hearing loss. Under the IHA, Caltrans would be required to install the BAS and to establish exclusion zones around each pier blast. These zones are the areas in which the marine mammals could experience permanent hearing loss, serious injury or mortality. If marine mammals are observed within their respective exclusion zones prior to each blast, the blast would be delayed until it is assumed that the animal has moved beyond the exclusion zone. The area of these zones is based on the results of the Pier E3 blast.

The draft IHA also requires other measures including a minimum number of observers that would monitor for marine mammals prior to, during and after each blast, and a marine mammal-stranding plan. For Piers E4 and E5, Caltrans also proposes to deploy acoustic deterrent devices around the piers and in the vicinity to deter marine mammals from entering the exclusion zones. The draft IHA also states that the removal of the former east span is not likely to negatively affect the habitat of marine mammal populations because no permanent loss of habitat would occur, and pinniped haul-out and pupping sites are at a sufficient distance from the project area that they would not be affected. Further, the test blasts are expected to have minimal impacts on marine mammals.

- d. **Potential Impacts to Birds.** State- and federally-listed bird species that occur within the project area include the California least tern, California brown pelican and American peregrine falcon. Caltrans proposes to conduct monitoring for the least tern and brown pelican prior to each controlled blast in order to avoid take of these species. If either species are observed diving within an exclusion zone of up to 300 feet from the pier, the blast would be delayed until monitors confirm that the bird has left the exclusion zone. This exclusion zone may be less than 300 feet as smaller piers would require fewer explosives. In addition, Caltrans proposes to deter birds from entering or to flush birds from the exclusion zone within the hour prior to controlled blasting, through the use of auditory or visual devices or human presence.

The Commission should determine whether the proposed project is consistent with the Commission's policies protecting Bay biological resources.

- 3. Water Quality.** The Bay Plan Water Quality Policy 2 states: “[w]ater quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the Regional Water Quality Control Board’s Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Water Quality Control Board, should be the basis for carrying out the Commission’s water quality responsibilities.” Policy 3 states, in part: “[n]ew projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay...”

For the Pier E3 Demonstration Project, Caltrans expected that changes in pH would be the most significant water quality impact, followed by turbidity. The monitoring results from the Demonstration Project showed that the increased pH caused by the blast returned to background level approximately four hours after the implosion, and that turbidity levels were below the modeled values and the turbidity objective. Caltrans also found no measurable impact on water quality in the vicinity of the eelgrass beds by Yerba Buena Island and Treasure Island. Based on these results, Caltrans concluded that the “water quality impacts were less than predicted.”

Like for Pier E3, potential water quality impacts from the proposed demolition of Piers E4 through E18 would occur during the controlled blasting of each pier and during debris management activities. The controlled blasts are anticipated to occur during slack tides, between the peak high tide and ebb current, in order to minimize water quality impacts. The water conditions would be relatively still and quiescent, which would allow sediment to fall out of suspension and reduce suspended sediment concentration and turbidity. Based on models and the Pier E3 Demonstration Project, Caltrans expects the area of high pH to be limited to a 100-foot radius around each pier after implosion, and that the effects would diminish within approximately four hours of implosion as a result of mixing from tidal currents. Further, the high pH from multiple blasts is not expected to accumulate in benthic habitats. The models show that turbidity is expected to drop to pre-implosion baseline conditions within five hours. Caltrans has stated that the blast attenuation system would confine sediment released during the blasts. Caltrans also expects that strong currents would limit the ability of the suspended sediment to diffuse laterally towards eelgrass beds. During debris management, water quality impacts are anticipated to be minimal.

Following each implosion, water quality monitoring would be performed to measure turbidity, pH, dissolved oxygen, temperature, and conductivity, and monitoring of environmentally sensitive areas (ESAs) would be conducted when construction activity occurs within 1,000 meters of an eelgrass bed or sand flat. During debris management, Caltrans proposes to conduct monitoring in accordance with the requirements of the RWQCB in order to minimize impacts during clamshell operations.

On June 21, 2016, the San Francisco Bay Regional Water Quality Control Board (RWQCB) accepted the Caltrans’ Stormwater Pollution Prevention Plan (SWPPP) for the demolition of Piers E4 and E5 by mechanical means and controlled implosion. The SWPPP includes water quality sampling and plume mapping for 1-8 hours after each blast, ESA monitoring for 24 hours after each blast, and sediment quality assessment following

completion of debris management activities. The RWQCB concludes that, “aside from minor, temporary impacts, the demolition of Piers E4 and E5 will have acceptable impacts of water quality.” However, Caltrans is still in the process of improving design details for debris containment best management practices and adding ESA monitoring locations near Alameda Point, south of the project area. These changes would be submitted to the RWQCB for acceptance prior to commencement of the proposed work. The RWQCB has stated that, for the demolition of Piers E6-E18, Caltrans is required to prepare, submit and receive RWQCB acceptance of specific SWPPPs for that subsequent demolition work.

The Commission should determine whether the proposed project would be consistent with Bay Plan policies on water quality.

B. Review Boards

1. **Engineering Criteria Review Board (ECRB).** The Commission’s ECRB did not review the proposed project because no uses are proposed on fill.
2. **Design Review Board (DRB).** The Commission’s DRB did not review the project as public access improvements are not proposed.

C. **Environmental Review.** According to Caltrans, the proposed project is statutorily exempt from the need to prepare an environmental document under the California Environmental Quality Act (CEQA), according to Street and Highways Section 182.2, which provides for CEQA exemption of toll bridge seismic retrofit and replacement projects. The San Francisco-Oakland Bay Bridge East Span Seismic Safety Project qualifies under this category.

D. Relevant Portions of the McAteer-Petris Act

1. Section 66605
2. Section 66610

E. Relevant Map and Policies of the San Francisco Bay Plan

1. Fish, Other Aquatic Organisms, and Wildlife
2. Subtidal Areas
3. Mitigation
4. Water Quality